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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,653	02/07/2001	Yasuo Ohsawa	Q62556	9224

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EXAMINER
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MAKI, STEVEN D

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 11/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

CHO15

**Office Action Summary**

Application No.

09/777,653

Applicant(s)

OHSAWA, YASUO

Examiner

Steven D. Maki

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12, 15 and 17 is/are allowed.
- 6) ☒ Claim(s) 1-11, 13, 14, 16 and 18-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9-22-03 has been entered.

2) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3) Claims 16, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 16, it is unclear why "according to Claim 1" is recited on line 1 since claim 16 describes most of the subject matter of present claim 1. It appears that applicant intended claim 16 to be an independent claim. In claim 16 line 1, it is suggested to delete --according to Claim 1--.

In claim 16 line 11, --portion-- should be inserted after "first land" so that consistent language is used.

Claims 18 and 19 are indefinite because the subject matter therein is inconsistent with the limitation in claim 1 of the smaller grooves extending only in the longitudinal direction.

4) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5) Claims 18 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claims 18 and 19, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is (1) the combination of the subject matter of claim 18 and the subject matter of the smaller grooves extending only in the longitudinal direction in claim 1 and (2) the subject matter of claim 19 and the subject matter of the smaller grooves extending only in the longitudinal direction in claim 1. As to claim 18, figure 18 shows undulating smaller grooves but not smaller grooves as extending "only" in the longitudinal direction. As to claim 19, figures 20 and 21 show inclined smaller grooves but not smaller grooves as extending "only" in the longitudinal direction.

6) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Europe '873

**8) Claims 1-10 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Europe '873 (EP 393873).**

Europe '873 discloses a tire having blocks defined by grooves. The groove walls are provided with steps as shown in figure 1. The steps define "smaller grooves". The step height is x and the step width is y. At col. 4 lines 49-51, Europe '873 discloses "...the step height (x) and step width (y) of the steps line in the range of 0.2 to 2 mm". Hence, Europe '873 discloses steps having a height x of 0.2 mm and a width y of 0.2 mm. As to claims 1-10 and 24, the claimed tire is anticipated by the above noted tire of Europe '873. The smaller grooves defined by steps having a height x of 0.2 mm and a width y of 0.2 mm have a pitch of 0.28 mm and a depth of 0.14 mm. The functional language described in the last three lines of claim 1 is inherent in the tire of Europe '873 having the disclosed step height of 0.2 mm and step width of 0.2 mm. As to claims 9 and 10, the subject matter therein fails to define over stepped walls as disclosed by Europe '873.

Heinen

**9) Claims 1-7, 9-11, 13-14 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinen (US 6415835).**

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Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Heinen, directed to reducing skin friction drag so as to increase flow of water within a groove of a tire tread, discloses a tire having at least one at least one groove for channeling water. One of ordinary skill in the art would readily understand from Heinen that the tread may contain blocks defined by grooves. In any event: It would have been obvious to one of ordinary skill in the art to use Heinen's at least one groove for channeling water for a tread having grooves defining blocks since it is taken as well known / conventional per se in the tread art to use blocks defined by grooves in order to improve wet traction / performance. The at least one groove for channeling water has peaks and valleys. The depth of each peak can vary so as to define riblets 28. See figure 5. The riblets of figure 5 are defined by "radially extending smaller grooves" and "longitudinally extending smaller grooves". See figure 5. The peaks and valleys reduce skin friction drag to thereby increase water flow from the groove. Heinen teaches that pitch P1 and depth D1 of the peaks and valleys can be optimized for tire speed and groove size. Heinen teaches that the pitch P1 may be less than 40% of the groove width (e.g. less than 5 mm) and the depth may be 5-15% of groove width (e.g. less than 3 mm).

As to claim 1, it would have been obvious to one of ordinary skill in the art to use smaller longitudinally extending grooves having the claimed depth (0.1-0.5 mm) and the claimed pitch (0.5-0.4 mm) since (a) Heinen teaches using peaks and valleys to form

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riblets 28 (each riblet defined by "radially extending smaller grooves" and "longitudinally extending smaller grooves"), (b) Heinen teaches that the peaks and valleys reduce skin friction drag to thereby increase water flow from the groove, and (c) Heinen teaches that the pitch P1 may be less than 40% of the groove width (e.g. less than 5 mm) and the depth may be 5-15% of groove width (e.g. less than 3 mm) wherein pitch P1 and depth D1 of the peaks and valleys can be *optimized* for tire speed and groove size. No undue experimentation would have been required to arrive at the claimed ranges for depth and pitch in view of Heinen's teaching to *optimize* the peaks and valleys to reduce skin friction drag and thereby increase water flow so as to improve wet performance. The description of "at least one of said grooves formed in said tread, so as to extend only in a longitudinal direction" fails to exclude radially extending grooves.

As to the dependent claims: As to claims 2-7, the limitations therein would have been obvious in view of Heinen's teaching to form the riblets on walls of circumferential and lateral grooves using pitch P1 and depth D1 to reduce skin friction drag to thereby increase water flow from the groove. In claims 9-11, the claimed turbulence generating zones read on "zones" defined by riblets. In other words, the subject matter in claim 9-11 fails to define over riblets on groove walls as disclosed by Heinen. As to claims 13-14 and 21-22, the limitations therein would have been obvious since Heinen teaches that the pitch and depth of the peaks and valleys (which can have various cross sectional shapes) can be varied. See for example col. 5 lines 13-15. As to claims 20 and 23, the limitations therein would have been obvious since Heinen suggests using

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various cross section shapes for the peaks. As to claim 24, no smaller grooves are provided on the ground contacting surface in the tire of Heinen.

**10) Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heinen (US 6415835) as applied above and further in view of Japan '605 (JP 3-86605).**

As to claim 19, it would have been obvious to incline the smaller grooves of Heinen as claimed in view of (a) Heinen's teaching that the peaks and valleys for improving flow of water in the groove may be inclined and (b) Japan '605's suggestion to direct water in a groove along a groove sidewall along an inclined curved path which approaches parallel near the ground surface.

#### **Allowable Subject Matter**

**11) Claims 12, 15 and 17 are allowed.**

**Claim 16 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.**

**Claim 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.**

#### **Remarks**

**12) The prior art rejection using Japan '704 (JP 3-57704) has been withdrawn in view of the amendment to claim 1 filed 9-22-03 and applicant's corresponding arguments.**

Applicant's arguments with respect to claims 1-11, 13-14 and 18-24 have been considered but are moot in view of the new ground(s) of rejection.



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With respect to Heinen, applicant's arguments filed 8-19-03 and 9-22-03 have been fully considered but they are not persuasive; it being emphasized that claim 1 continues to fail to exclude radially extending smaller grooves.

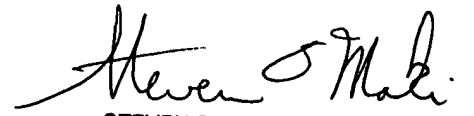
Walsh et al (US 4706910), which fails to disclose a tire, is cited of general interest to show a skin friction reduction system for surfaces such as the surface of an aircraft wing.

13) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is 703-308-2068 until Dec. 18, 2003 and (571) 272-1221 after Dec. 18, 2003. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (703) 308-3853. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Steven D. Maki  
November 17, 2003

  
STEVEN D. MAKI  
PRIMARY EXAMINER  
~~GROUP 1300~~  
Av 1733  
11-17-03